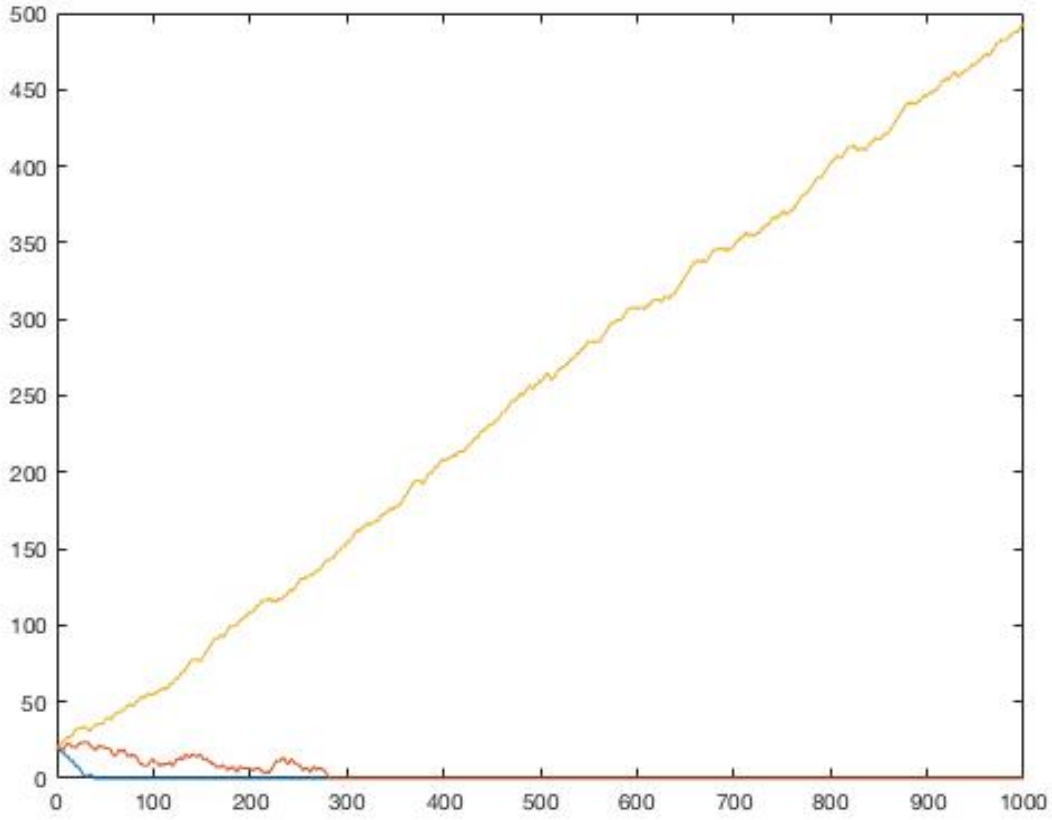
HW1 report LinxiaoBai

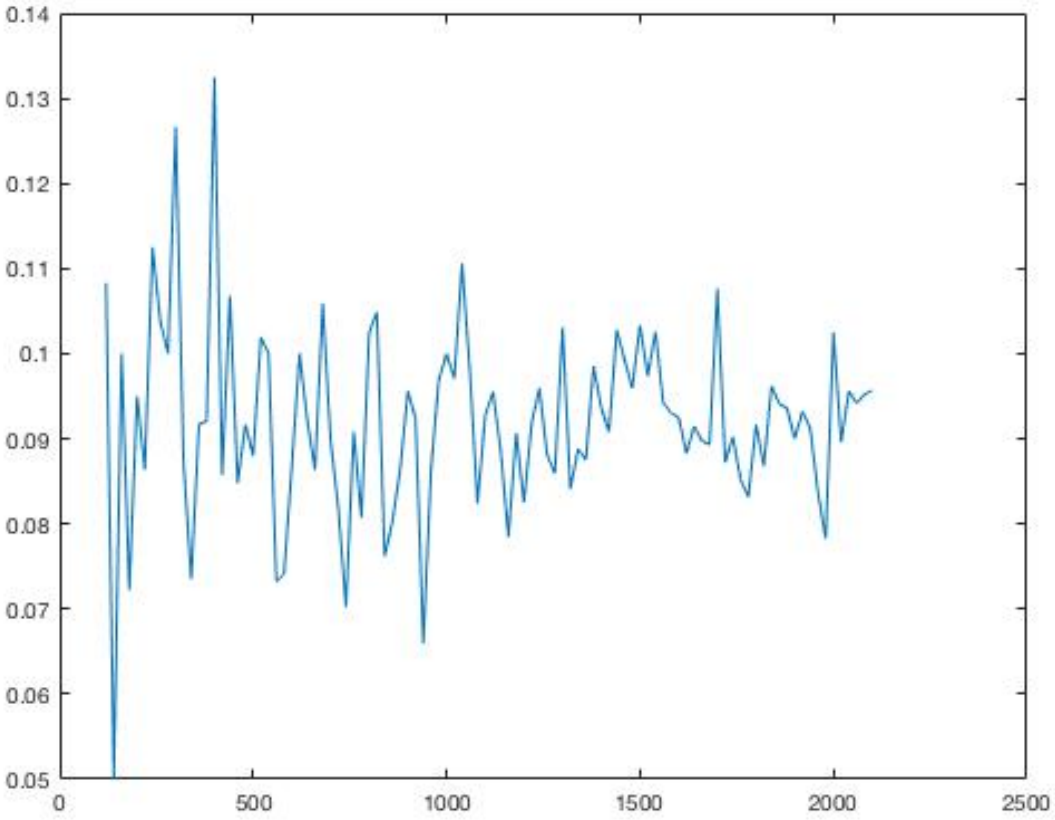
Code is attached to the back.

Question A
The plot is shown below: where w0=20, T=1000, p = 0.25, p = 0.5 and p = 0.75.



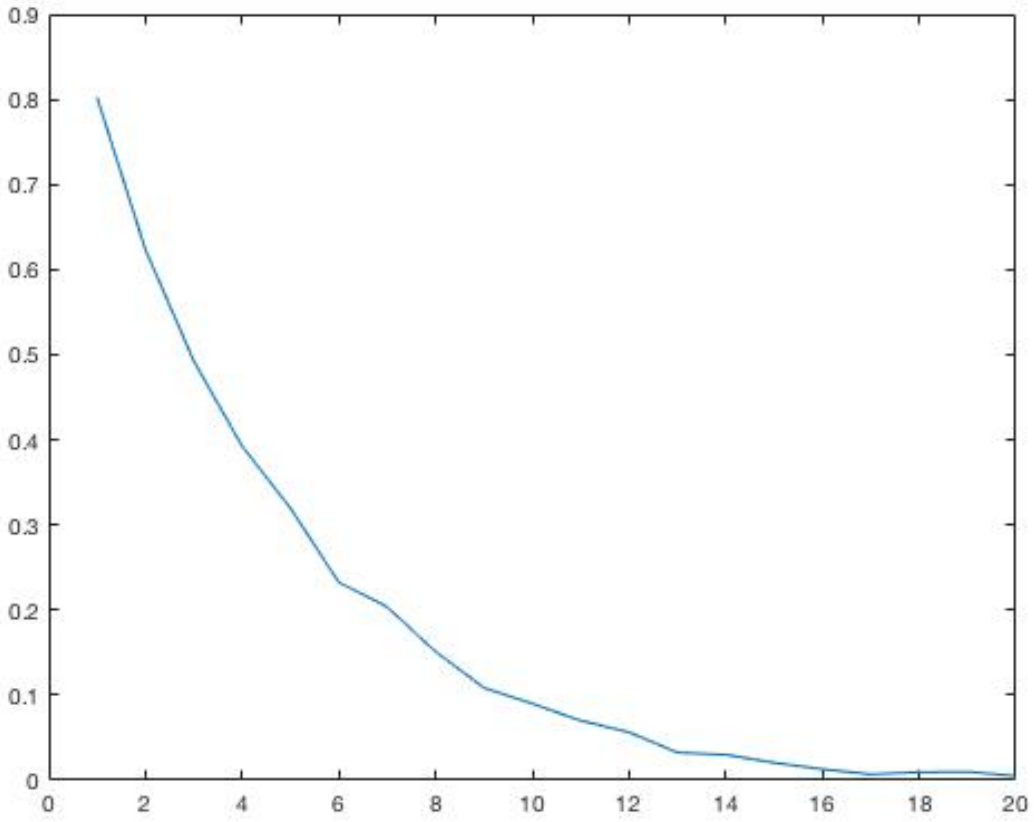
Question B

By plotting p verses N, we see that as N increases, P tends to converge to a value between 0.1 to 0.09, this convergence is almost done after N> 2000. So we set N=2000, and p is reported to be 0.95 as the average of 0.1 and 0.09.



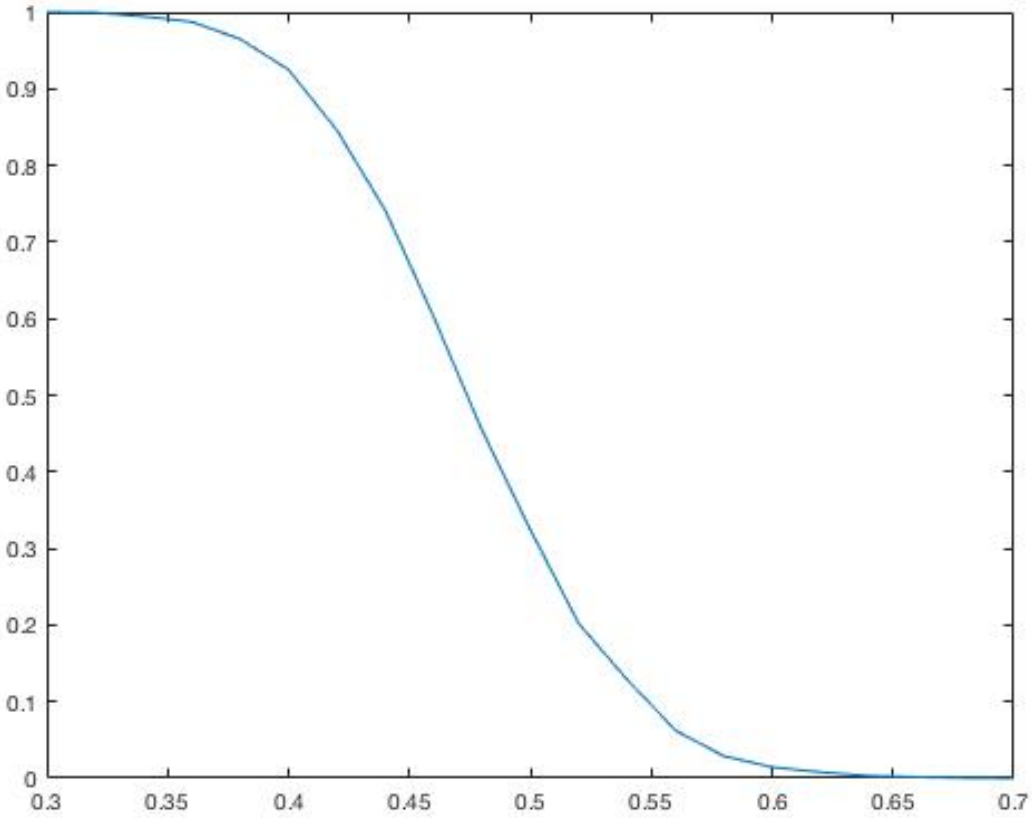
Question C

The plot is shown below where N is fixed to be 2000 as the result of B suggests.



Question D

The plot is shown below. As the plot indicates, when p of win> 0.5, the p of bankrupt stays under 0.5. However, when p of win < 0.5 the p of bankrupt stays above 0.5. The curve changes suddenly as p goes near 0.5. it suggests a great variance of sample when p approaches 0.5.



Question E

By looking at the histogram, we see that the distribution is very close to normal except the left half is cut. The mean of T is estimated to be 5*w0. That is 50.1120 as w0=10.